

REMARKS

This paper is submitted in response to the Office Action for the above-identified application mailed January 25, 2006.

Before discussing the Office Action and this Response, the undersigned representative calls to the attention of the Examiner that the representative is submitting this paper pursuant to the general authority granted under 37 CFR Sec. 1.34. Within three (3) weeks of the mailing of this paper, a new Power of Attorney signed by the Assignee's agent should be submitting explicitly designating this representative to act with regard to this application. If this paper is not in the Examiner's file for this application at the time this Response is reviewed, the Examiner is encouraged to contact the designated representative, J. William Frank III, to discuss this matter.

In the Office Action, all previous claims, Claims 1-59, were rejected under 35 U.S.C. Sec 103 for being obvious primarily over Chader, U.S. Pat. No. 5,617,857, in view of Adair, U.S. Pat. No. 5,873,814 and/or Panaescu, U.S. Pat. Pub. No. 2003/0078494.

Initially, under cover of this Response, the title of the application has been amended to precisely indicate the invention to which the claims are directed.

Also amendments have been made to the specification and drawings. No new matter is added.

With regard to the claims, last presented Claims 1-59 are now canceled. Newly presented Claims 60-99 are the only claims now present in the application. Claims 60, 71, 81 and 89 are the independent claims. Claims 61-70 depend from Claim 21. Claims 72-80 depend from Claim 71. Claims 82-88 depend from Claim 81. Claims 90-99 depend from Claim 89.

I. INDEPENDENT CLAIMS 60, 71 and 89

Independent Claims 60 and 71 are directed to a surgical tool with handpiece from which an actuatable accessory extends. The claimed accessory is designed to accomplish a surgical procedure. The tool also has an actuating unit that actuates the accessory. A tracking member, also part of the claimed tool, wirelessly exchanges signals with a surgical navigation system. This allows the surgical navigation system to generate data that indicates the position of the accessory. Also part of the claimed tool is a wireless receiver for receiving data indicating the position of the accessory. The claimed tool further includes a display that receives data from the receiver that, based on the data, presents a viewable indication of the position of the accessory.

Chader merely discloses a conventional surgical navigation system. The image generated by the host computer 18 is presented on a large screen 28 separate from the actual instrument 32.¹ Adair teaches one to mount a monitor module 30 on an instrument and provide images-defining signals to the monitor by a cable 34. Cable 34 also provides the power required to energize the monitor.²

Panescu's display 150 is described as a conventional CRT or LED display.³ There is no difference between this display and the one disclosed by Chader.

Thus, the prior art, when added together, simply discloses a corded monitor mounted to a surgical instrument. The above construction is not the same as the Applicants' tool as recited

¹ U.S. Patent No. 5,617,857, column 5, line 65 to column 6, line 2 and Figure 1.

² U.S. Patent No. 5,873,814, column 26-30 and Figure 1.

³ U.S. Pat. Pub. No. 2003/0078494, paragraph 135.

by Claims 60 and 71 that include a "wireless receiver" that receives data from a complementary surgical navigation unit.

If one were to introduce a combination of Chader and Adair into a sterile surgical field, one would introduce into the field a cable to provide the image-defining signals and power. This means, prior to surgery, one would have to first sterilize the cable. During the procedure, the surgeon and adjacent surgical personnel would have to work around cable.

Since the claimed handpiece includes a wireless receiver, the pre-procedure and actual procedure considerations associated with the prior art cable are eliminated.

Moreover, neither Chader nor Adair suggest that the handpiece actuator that actuates the accessory is some sort of power consuming device.⁴ Thus, unlike the sum of the prior art, the claimed assembly is a unit that, simultaneously: actuates an accessory to perform a surgical task; provides an on handpiece indication of the position of the accessory from the handpiece; and does not introduce a signal cable into the surgical field. Collectively, these first two features means that the surgeon, while operating the actuator, does not have to divert his/her eyes to determine if the accessory is properly positioned.⁵

Thus, even if the prior art is combined, the resultant assembly would not have the features and resultant benefits of the handpiece recited by Applicants' Claims 60 and 71. Therefore it is submitted that these claims are directed to an assembly that is not suggested by the prior art and are therefore in condition for allowance.

⁴ The structure is specifically called in Claims 61, 62, 67, 71-80 and 89-99.

⁵ Claims 66, 76 and 95 are specifically directed to this version of the claimed handpiece wherein the power consuming actuator, the tracker the wireless communications link and the display operate simultaneously.

II. INDEPENDENT CLAIMS 81 AND 89

Independent Claims 81 and 89, like the above-discussed independent claims, are directed to a handpiece from which an accessory extends and to which a tracker is attached. The handpiece of these claims includes the wireless receiver. More particularly, the surgical navigation system with which the handpieces recited by these claims is used generates data indicating the position of the accessory relative to a target location. The claimed receiver receives data indicating the position of the accessory relative to the target location. The claimed display presents a "symbolic" indication of the position of the accessory relative to the target location.

Chader states that the image presented on his screen is "a position marker of the instrument 12 relative to the previously produced images of the body."⁶ Adair's monitor is an "endoscopic video monitor" "which provides a visual display of a surgical site."⁷ The prior art systems present complete views of surgical sites. This does not equal the claimed invention where the receiver and display cooperate to provide a symbolic representation of the position of the accessory relative to a target location. Claim 89 even states that this indication "is less than an image of the target location."

In sum, the claimed invention only presents the minimal data required to determine whether or not the accessory is on track. This means the mental processing required by the surgeon in order to interpret the data is likewise kept to a minimum.

Furthermore, the prior art systems are designed so that, presented on their displays, are complete "images of the body" or, "endoscopic images." These images completely fill the

⁶ U.S. Patent No. 5,617,857, column 5, line 67 to column 6, line 2.

⁷ U.S. Patent No. 5,873,814, column 2, lines 16-17 and column 1, lines 9-10.

displays on which they are presented. In contrast, the claimed invention is designed so that, to present the symbolic representation of accessory position, less than all of the individual light emitting elements are actuated.⁸ Since less display forming elements are actuated with the claimed assembly, it stands to reason that a reduced number of display drive signals, less than a complete full frame bit map or raster scan, are supplied to the claimed display. This means the bandwidth of the signal supplied to the wireless receiver is less than what is required by the prior art systems. The reduced bandwidth and display signal requirements of the claimed system makes it possible to provide a receiver and a display that are less costly less costly than what would be required by a combination of the prior art systems.

Therefore, the prior art even when combined, does not offer a system for providing image data of accessory position that is both as easy to provide and as simple to perceive as is provided by the claimed tool. Accordingly, independent Claims 81 and 89 are likewise directed to an invention that represents a non-obvious departure from the prior art that is entitled to patent protection.

III. DEPENDENT CLAIMS

The dependent claims are all allowable at least because they dependent from allowable independent claims.

Furthermore, Dependent Claims 66, 76 and 95 recite that the power consuming actuating unit, the tracking member, the wireless receiver and the display of the claimed tool are all configured to operate simultaneously. Thus, only the Applicant's tool of these claims, not the prior art, is directed

⁸ This feature of the invention is specifically recited by Claims 82 and 90.

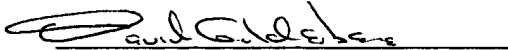
drawn by the display will be so great the battery will be completely discharged.

Thus at least the above-discussed dependent claims are further in condition for allowance because they are independently directed to an invention that is distinct variation over the prior art.

In conclusion it is respectfully submitted that all the claims of this application are directed to a patentable invention and are in an allowable form. Since the claims, as well as the other parts of this application are in an allowable state, the Applicants now courteously solicit prompt issuance of a Notice of Allowance.

Respectfully submitted,

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Attachments: Annotated Figure 1
 Replacement Figure 1

AMENDMENTS TO THE DRAWINGS

The Applicants now amend the drawings of this application. Attached hereto is a marked-up drawing sheet with the below proposed changes marked. A replacement drawing sheet with the changes entered is also enclosed.

Figure 3

Add to this drawing a phantom cylindrical depiction of a motor, "MTR" marked with identification number "115."